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Centella asiatica (Indian pennywort), an effective therapeutic but a weak sensitizer.

Hausen BM.

Department of Dermatology, University Hospital, Hamburg, Germany.

The sensitizing capacity of *Centella asiatica* (raw extract) and its triterpenic constituents asiaticoside, asiatic acid and madecassic acid has been studied in guinea pigs. The extract itself as well as the 3 acids were found to be very weak sensitizers. *Centella asiatica* extract is used effectively in the treatment of keloids, leg ulcers, phlebitis, slow-healing wounds, leprosy, surgical lesions, striae distensae and cellulitis. Although applied frequently to damaged skin, the risk of acquiring contact sensitivity to this plant or its constituents is low.

MeSH Terms:

- Adult
- Animal
- Case Report
- Dermatitis, Allergic Contact/immunology
- Desensitization, Immunologic*
- Female
- Guinea Pigs
- Human
- Intradermal Tests
- Patch Tests
- Plant Extracts/therapeutic use*
- Plant Extracts/immunology
- Plants, Medicinal*
- Terpenes/therapeutic use
- Terpenes/immunology
- Triterpenes/therapeutic use*
- Triterpenes/immunology

Substances:

- asiatic acid
- madecassic acid
- Triterpenes
- Terpenes
- Plant Extracts



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☐ 1: Int J Clin Pharmacol Res 1990;10(4):229-33

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Effects of Centella asiatica extract on mucopolysaccharide metabolism in subjects with varicose veins.

Arpaia MR, Ferrone R, Amitrano M, Nappo C, Leonardo G, del Guercio R.

Institute of General Medicine and Clinical Methodology, Department and Service of Medical Angiology, Faculty of Medicine and Surgery, University of Naples, Italy.

The effects were studied of the total triterpenic fraction of *Centella asiatica* on serum levels of the uronic acids and lysosomal enzymes involved in mucopolysaccharide metabolism (beta-glycuronidase, beta-N-acetylglucosaminidase, arylsulfatase) in patients with varicose veins. The basal levels of uronic acids (467.7 +/- 69.3 micrograms/ml) and of lysosomal enzymes (beta-glycuronidase 1.8 +/- 0.4 microM/min/l, beta-N-acetylglucosaminidase 23.1 +/- 0.4 microM/min/l, arylsulfatase 0.078 +/- 0.003 microM/min/l) were elevated, indicating an increased mucopolysaccharide turnover in subjects with varicose veins. During treatment with *Centella asiatica* extract (60 mg/day for three months), these levels fell progressively. At the end of treatment the serum uronic acid (231.8 +/- 51.5 micrograms/ml), beta-glycuronidase (1.2 +/- 0.05 microM/min/l), beta-N-acetylglucosaminidase (17.7 +/- 0.7 microM/min/l) and arylsulfatase (0.042 +/- 0.003 microM/min/l) levels were highly significantly lower than the basal levels (p less than 0.01). The results of this trial provide an indirect confirmation of regulatory effects of the extract of *Centella asiatica* on metabolism in the connective tissue of the vascular wall.

MeSH Terms:

- Acetylglucosaminidase/blood
- Arylsulfatases/blood
- Glucuronidase/blood
- Glycosaminoglycans/metabolism*
- Human
- Plant Extracts/pharmacology*
- Uronic Acids/blood
- Varicose Veins/metabolism*
- Varicose Veins/enzymology

Substances:

- Glucuronidase
- Acetylglucosaminidase
- Arylsulfatases
- Uronic Acids
- Plant Extracts

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PDR® for Herbal Medicines entry for:

Centella Asiatica

Gotu Kola

Description

DESCRIPTION

Medicinal Parts: The medicinal parts are the dried aerial parts, the fresh and dried leaves and stem.

Flower and Fruit: The pedicles are 1.2 to 4 cm long. The sepals of the epicalyx are oval to circular, with a membranous border and are about 2.5 to 3 mm long and 1.5 to 2.5 mm wide. The umbels have 2 or 3 sessile or short pedicled florets. The petals are white, to purple or pink. The calyx is not generally dentate. The fruit is oval to globose and has a diameter of 2 to 5 mm. The mericarps are clearly flattened at the sides and usually have 7 to 9 ribs and are raised rugose.

Leaves, Stem and Root: Centella asiatica is tender umbelliferous plant with numerous creeping stems which have roots at the nodes and are glabrous. The circular-reniform leaves are 2 to 6 cm long and 1.5 to 5 wide, with a crenate margin and 5 to 9 ribs. The petioles are 3 to 30 cm long.

Characteristics: Gotu Kola is almost tasteless and odorless.

Habitat: The plant is indigenous to southeast Asia, India, Sri Lanka, parts of China, western South Sea Islands, Madagascar, South Africa, southeast U.S., Mexico, Venezuela, Columbia, and eastern South America.

Production: The plant is gathered throughout the year and dried in the sun.

Other Names: Indian Pennywort, Marsh Penny, White Rot, Thick-leaved Pennywort, Hydrocotyle

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ACTIONS AND PHARMACOLOGY

COMPOUNDS

Triterpene acids, including madasiatic acid

Triterpene acid ester from oligosaccharides (pseudosaponins): including asiaticoside, asiaticoside A, asiaticoside B

Volatile oil

EFFECTS

The psychotropic and eupharmacological effects of an extract of the drug were investigated, using mice and rats in tests. In forced swimming behavioral tests, an extract of Centella caused a significant reduction in the duration of the immobilization phase. These tests show the sedative and antidepressive effects of Gotu Kola.

Ulcer-protective effect: Asiaticoid (suspended in propylene glycol) administered orally to rats, significantly reduced the formation of ulcers.

Antimicrobial effect: Using the puncture test procedure, asiaticoid showed the development of effectual zones with *Pseudomonas pyocyaneus* and *Trichoderma mentagrophytes*.

Healing effect: Asiaticoid mixture accelerated the healing process of wounds in rats in repeated skin injury tests.

Effect on vein tone: In a randomized, multi-center, double-blind versus placebo study of 94 patients with chronic insufficiency of the veins, the application of an asiaticoid mixture led to significant improvement in subjective (heaviness in the legs, pain in standing up, edema) and objective (plethysmographic measurements of vein tone) parameters.

The influence of asiaticoid on the formation of collagen is under discussion.

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INDICATIONS AND USAGE

Clinical studies point to the effectiveness of triterpene fractions of the drug on vein insufficiency. Further experiments are still necessary to provide final affirmation of the therapeutic usefulness of the drug.

In India, the drug is used for skin diseases, syphilis, rheumatism, in the treatment of leprosy, for mental illness, epilepsy, hysteria, and for dehydration.

In southeast Asia, the drug is used to prompt bladder activity (urination), for physical and mental exhaustion, diarrhea, eye diseases, inflammations, asthma, and high blood pressure.

It is recommended to take the drug for rheumatism and skin diseases, and topically for poorly healing wounds, leprosy sores, and post-operative scarring.

Countless studies and reports are available on the Madecassol® therapy. However, these publications are difficult to interpret.

The efficacy of the drug has not been sufficiently proven.

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PRECAUTIONS AND ADVERSE REACTIONS

No health hazards or side effects are known in conjunction with the proper administration of designated therapeutic dosages. The drug possesses a low potential for sensitization through skin contact.

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DOSAGE

Daily Dosage: Drug; 0.6 gm of dried leaves or infusion to be taken 3 times daily, normal single dose is 0.33 to 0.68 gm.

Centasium®: 10 mg p.o. (tablets) 3 to 6 times daily; 10 mg i.m. daily (ampules); powder (2%) or ointment (1%), 1 to 2 times daily; 1 drop applied to the area under the eyelids, 6 times daily.

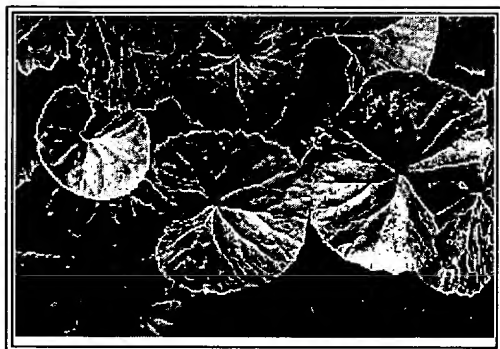
Centelase®: 3 to 6 tablets (10 mg) daily; 20 drops (10 mg/ml) 3 to 6 times daily; 1 ampule (10 mg/ml) i.m. daily; powder (2%) or ointment (1%), 1 to 2 times daily.

Emdecassol®: ointment twice daily.

Madecassol®: 3 to 6 tablets (10 mg) daily.

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PHOTO



NOTE: This photo does not depict the actual size of the plant, be used only for identification by shape and color. It is furnished as an aid in recognition of the source plant only. In cases of poisoning, presence of the herb in the product under suspicion should be verified by chemical analysis.

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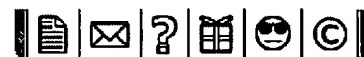
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Side Effects

Like all the other treatments for epilepsy, the ketogenic diet has some side effects, which may or may not affect a particular child. Some side effects may go away if caught and managed early on. Knowing what to look for can make a big difference.

Reported side effects include dehydration, constipation, and, sometimes, complications from kidney stones or gall stones.

Adult women on the diet may have menstrual irregularities. Pancreatitis (inflammation of the pancreas), decreased bone density and certain eye problems have also been reported. Again, this is why the medical team closely follows children or adults who are on the diet.

The diet lacks several important vitamins which have to be added through supplements.

Sometimes high levels of fat build up in the blood, especially if a child has an inborn defect in his ability to process fat. This possibility can lead to serious effects, which is another reason for careful monitoring.

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